



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,428	12/10/2003	Wilhelmus Josephus Box	081468-0307147	5138
909	7590	09/23/2005	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			NGUYEN, HUNG	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2851	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11.8

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/731,428	BOX ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hung Henry V. Nguyen	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 3 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-10, 12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (U.S. Pat. 6,353,271) in view of Getchel et al (U.S.Pat. 6,019,164).

With respect to claims 1-2, 4-10, 12-14 and 16, Williams discloses a lithographic apparatus comprising substantially all basic elements as recited in the instant claims such as: an illumination system (141) for providing a beam of radiation; a supporting structure (147) for supporting a patterning device (145) and the patterning device serving to impart a cross-section of the beam with a predetermined pattern to form a patterned beam; a substrate table (148) for holding the substrate (149) and a projection optical system (146) for projecting the pattern formed on the patterning device onto the substrate (see col.4, lines 19-34). Williams further teaches at least one of the supporting structure and the substrate table including a chuck (12) and a frame (11) that supports the chuck with respect to other parts of the lithographic system. Williams does not expressly disclose the chuck being thermally isolated from the frame. Getchel et al discloses a workpiece chuck having a chuck (10, 560) for supporting the substrate and a base/frame (48, for supporting the chuck and wherein the chuck is thermal isolated from the base/frame (see col.5, lines 57-59). Getchel further teaches a lower insulating plate (22) over the

Art Unit: 2851

frame/base and a plurality of thermally insulating supporting elements made of glass or other insulating material and the chuck includes a heat buffer system (14) and a vacuum space is provided between the chuck and the base/frame (see col.11, lines 45-49) and a circulating fluid system (see col.15, lines 14-15) is provided to cool off the chuck and remove the heat from the substrate (see col.3, lines 25-30). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Williams and Getchel et al to obtain the invention as specified in the above claims of the present application. It would have been obvious to a skilled artisan to have the base and chuck of Williams being thermally isolated as taught by Getchel. The purpose of doing so would have been to prevent the heat transfer from the base/frame to the chuck whereby the thermal deformation of the chuck is prevented.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Orihira et al (U.S.Pat. 5,685,363).

As to claim 15, Orihira et al discloses a chuck for use in a lithographic device comprising all of the structures set forth in the instant claims such as: a first side having support surface constructed to support an object (2) and a second side (12) having a low emissivity coating to

Art Unit: 2851

thermally isolate the chuck, and an enclosed chamber (10) positioned within the chuck and a heat absorbing material (18)/a phase transiting material positioned within the enclosed chamber (see figures 1-3).

***Allowable Subject Matter***

5. Claims 3 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 3, the prior art of record either alone or in combination, neither discloses nor makes obvious the combination of a lithographic apparatus where a chuck is provided to support the wafer and a frame that supports the chuck is thermally isolated from the chuck and the chuck and the frame are completely and spaced from the chuck thermally isolated from the chuck.

Claim 11 is allowed with the reasons set forth in the previous office action.

***Response to Amendment/Argument***

7. Applicant's amendment filed July 1, 2005 has been entered. Independent claims 1, 14, 16 have been amended. Applicant's arguments in conjunction with the amendment have been carefully reviewed but they are not found persuasive. The applicant is reminded that the claimed subject matter to examination will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not be read into the claims. In re Yamamoto, 740 F. 2d 1569, 1571, 222 USPO 934, 936 (Fed.Cir. 1984).

With this in mind, the discussion herein will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitation that is not in the claims or any argument that is irrelevant to or does not relate to any specific claimed language will not be warranted.

With respect to claims 1, 14, and 16, in response to applicant's argument that none of the embodiments disclosed by Getchel teaches or suggest a chuck and a frame that are separated and spaced from one another, as recited in the instant claims of the present application; the Examiner respectfully disagrees with the applicant. Getchel et al meets all the structures as broadly claimed. For example, in column 5, lines 57-59, Getche clearly discloses that "*the present invention provides isolation between the chuck and the base while also providing adequate mechanical support for the mechanical load on the wafer*". By viewing figure 9A, one having ordinary skill in the art would recognize that in the broadest sense, the chuck (560) and the frame/base (576) are separated and spaced from each other via insulating plate (538) or mounting plate 516 (see col.15, lines 23-34).

With respect to claim 15, Applicant argues that Ohiria et al does not disclose a chuck with a second side having a low emissivity coating to thermally isolate the chuck and a phase transiting material positioned within the enclosed chamber. The Examiner respectfully disagrees with the applicant. Oihira meets the limitations as claimed. In the broadest sense, the second side of rubber elastic (22) and the resin sheet 12 (made of fluororesin, polyimide) constitute "a second side having a low emissivity coating to thermally isolate the chuck" as claimed , and the heat absorbing material (18) positioned in chamber (10) can be regarded as "a phase transiting material positioned within the enclosed chamber" as recited in the claim 15.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hvn  
9/18/05



**HENRY HUNG NGUYEN**  
**PRIMARY EXAMINER**